California Wing

Flight Line / Aircraft Marshalers Guide

Flight Line Training

For flight line workers (Aircraft Marshalers), not supervisory (Air Support Group Supervisor / Flight Line Officer) personnel

Safety

The primary concern during any emergency services operation is safety. No activity is important enough that the safety of any ES personnel should be compromised, for any reason. All personnel are authorized to stop any activity on a flight line if an unsafe, or perceived unsafe, activity is occurring. Aircraft marshalers should contact the Air Support Group Supervisor (Flight Line Officer) or Safety Officer or MC if there is any concern over safety.

Clothing

The standard BDU uniform may be worn for aircraft marshalling assignments. All personnel should have adequate clothing available (jackets, gloves, etc) for working in cold temperatures. During warm temperatures, personnel may remove their BDU jackets and wear T-shirts. Jackets shall be secured to prevent blowing away.

<u>High-Visibility Vests</u>

All personnel working on the Aircraft Operations Area (AOA, that portion of the airfield that aircraft move on) must wear high-visibility clothing. This high visibility clothing may be an international orange vest with reflective material on it worn over normal duty uniforms, or high-visibility colored shirts such as the CAWG Ground Team uniform shirt (if authorized). All personnel operating on the AOA during hours of reduced visibility must wear a vest with reflective material on it. Aircrew members travelling to and from their aircraft do not need to wear high visibility clothing, however if conditions warrant, the Air Support Group Supervisor may consider having aircrew members escorted to their aircraft by marshalers.

Aircraft marshalers shall have high-visibility wands available during the day, and operating flashlights with visibility cones attached at night. Cone color shall be the same for both flashlights. High-visibility wands may be locally fabricated, attachment B is a drawing of one style.

While hats are not normally worn on flight lines, due to the chance of one being blown into an engine causing major damage, marshalers may wear hats during CAP aircraft marshalling. Hats will be removed and stored securely during any activities involving helicopters. Hats should provide warmth or sun protection, as needed. Should a hat be blown from a

Marshalers head, let it go. Under NO circumstance should a marshaler run on the flightline.

Hat retainer devices may be locally purchased or fabricated, to help secure the hat. They consist of two small alligator type clips on a short piece of cord. One clip is attached to the hat in the back and the other is attached to the wearers collar.

Earplugs

During engine start for all aircraft, and operations around turbine powered (turbo -or -fan jet or turboprop) aircraft and helicopters, ANSI approved hearing protection must be worn. This can be accomplished with suitable earplugs or earmuff type hearing protectors. The use of foam type earplugs is recommended due to their low cost. Earplugs may be connected to each other for security, however this is not necessary.

Eye Protection

Personnel operating in areas of blowing debris, sand, dirt, etc should have eye protection. This protection should be suitable, OSHA and ANSI approved goggles, however sunglasses or spectacles may be worn. During any helicopter operation, goggles must be worn.

Sun Protection

All flightline personnel should have sunscreen (SPF at least 15) available, and should use it. Sunscreen should be applied to all exposed skin surfaces at least every two hours. Air Support Group Supervisor (Flight Line Officer) or MC's will ensure that cadet personnel have and use sun protective products as needed.

Chapstick (lip balm) containing sun protection should also be available to all aircraft marshalers.

Breaks

It is very easy to become dehydrated while working on the flightline. All personnel should consume sufficient liquids to maintain their health. You should drink enough water to keep your urine clear and copious - if you don't have to go to the rest room, you aren't drinking enough water. Air Support Group Supervisor / Flight Line Officers shall ensure sufficient water is available for all personnel to have an opportunity to drink at least every 15 minutes.

The Air Support Group Supervisor / Flight Line Officer will brief you on how to request time for a rest room break, and how meals will be handled. To prevent fatigue, rest when you have the opportunity.

Typically, search missions (especially training) launch aircraft in surges. Between surges, take advantage of opportunities to rest in comfortable surroundings.

FOD

Foreign Object Damage (FOD) is the damage that can happen to an aircraft engine, propeller, rotor or other component from any foreign material being on the flight line. Aircraft marshalers that see any FOD material (including trash, rocks, nuts, bolts, screws, etc) should pick them up and place them in a suitable trash receptacle.

Handling Aircraft

Never stand in the propeller arc
Don't pull on anything except the towbar
Where to push
- On the ends of landing gear or wing struts
- Along fore / aft rivet lines on low wing aircraft wings

Parts not to touch
- Exhaust pipes
- Antennas
- Pitot Tubes

Servicing Aircraft

Let the pilot or fuel attendants do it. Only assist aircrew members in refueling or servicing aircraft.

Communications

Radios

On occasion flight line personnel will be equipped with short-range radios, typically CAP 26.620 MHz, 49 MHz headset radios, CAP Simplex FM radios or FRS radios. The Air Support Group Supervisor (Flightline Officer) will brief you on callsigns and operation of the radio.

The Air Support Group Supervisor (Flight Line Officer) will brief you on how to request breaks or pass other messages if radios are not used.

Emergencies

In an emergency, the marshaler will indicate to the aircrew that an emergency is occurring. Only if it is safe to do so (engine has stopped, aircraft is not moving, no flame threat) will aircraft marshalers attempt to assist personnel on board the aircraft to exit. Remember, the aircrew is wearing flame retardant clothing, aircraft marshalers typically aren't.

Report the emergency immediately, using the method the Air Support Group Supervisor briefed on. Reporting is more important than assisting in any further activities.

Fireguards will attempt to extinguish fires only after the engine and prop have come to a complete stop. Operate the fire extinguisher by pulling the safety pin, and directing the extinguishing agent onto the base of the flames from the upwind side. Keep low and sweep the extinguisher back and forth. In the event of a fire, the local fire protection service MUST be contacted.

If the fire seems out, carefully move the aircraft into a safe location where people and property will not be damaged should the fire break out again. Have a fireguard standing by with a fresh fire extinguisher, if available.

Aircraft Marshalling

Where to stand

Forward of the aircraft in full view of the pilots. Stay far enough forward that you can easily get out of the way of the aircraft. There is no reason to ever be close to an operating aircraft. Maintain eye contact with the pilot - the pilot sits in the left seat of airplanes and (usually) the right seat of helicopters.

Night Operations

During night operations, the marshaler will use a pair of same color light wands (flashlights with cones). During surface taxiing or parking, the pilot must stop immediately if one or both of the marshalers wands fail. Marshalers must be careful to not shine a light into the cockpit of an aircraft - the pilot's night vision will be impaired.

Aircraft Marshalling Signals

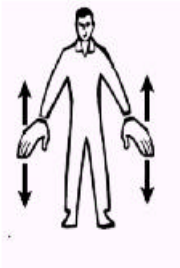
From Air Force Instruction 11-218 Aircraft Operation and
Movement on the Ground, 26 May 1994

1. PROCEED TO NEXT MARSHALER
Right or left arm down, other arm moved across the body and extended to indicate direction of next marshaler.

2. THIS MARSHALER
Arms above head in vertical position with palms facing inward.

3. STOP
Arms crossed above the head, palms facing forward.

4. SLOW DOWN
Arms down with palms toward ground, then moved up and down several times.



5. MOVE AHEAD
Arms a little aside, palms facing backwards and repeatedly moved upward-backward from shoulder height.

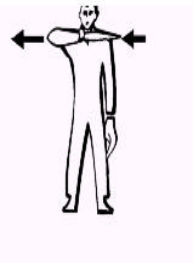
6. TURN TO THE LEFT

Point right arm downward, left arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.

7. TURN TO THE RIGHT
Point left arm downward, right arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.

8. START ENGINE(S)
Circular motion of right hand at head level with left arm pointing to engine.

9. CUT ENGINE(S)/ROTOR
Either arm and hand level with shoulder, hand moving across throat, palm downward.



10. FIRE IN THE ENGINE
Make rapid horizontal figure-of-eight motion at waist level with either arm, pointing at source of fire with the other.

11. OK or Yes

12. Not OK or NO

Directions for making Aircraft Marshalling Batons

Materials List:

1" dia PVC Schedule 40 plastic pipe, 18" long (1 per baton)
1" PVC pipe end cap (2 per baton)
3/16" dia nylon cord (parachute cord), (15" per baton)
International Orange spray paint (A/R)
Reflective Tape (A/R)
PVC pipe glue and primer (A/R)

Tools Needed:

Hack Saw with blade or PVC pipe cutters (to cut pipe)
Drill with 11/32" drill bit

Cut pipe to length
Prime and glue 1 end cap to pipe
Drill 3/16" hole in center of end cap
Double nylon cord through hole and secure with overhand knot, making loop
Prime and glue end cap with nylon cord to PVC pipe
Tie overhand knot in nylon cord to prevent cord from slipping through

Paint batons international orange

(Optional)
Apply reflective tape to end of baton away from nylon cord